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Record

Nov. 21, 2003

Volume 28 No. 15

Treasuring the Past Washington University in St. Louis *Shaping the Future*

Celebrating 150 Years

BioMed 21 to transform biomedical research

$300 million strategic initiative: Advance diagnoses, treatments

By Don Clayton

Washington University and the School of Medicine announced Nov. 17 that they will spend more than $300 million to rapidly bring the new knowledge of the human genetic blueprint to the patient's bedside and to change how illnesses ranging from diabetes to Alzheimer's disease to various cancers are understood, diagnosed and successfully treated.

This new strategic research initiative is called "BioMed 21," a reference to its potential to redefine how biomedical research will be conducted and medicine will be practiced as the 21st century unfolds. The program will include faculty from the schools of Medicine, Engineering & Applied Science and Arts & Sciences.

BioMed 21, a positive step toward making St. Louis a biotech powerhouse, will be supported through gifts, federal research grants and internal resources.

The announcement was made by Chancellor Mark S. Wrighton and Larry J. Shapiro, M.D., executive vice chancellor for medical affairs and dean of the School of Medicine. They said more than $200 million in endowment, construction and programmatic funding had already been committed in support of BioMed 21.

As part of BioMed 21's unveiling, the University announced that the medical school's renowned Genome Sequencing Center, under the direction of Richard K. Wilson, Ph.D., will receive new funding totaling more than $130 million over three years from the federal government's National Human Genome Research Institute (NHGRI).

The funding is part of the next generation of national, large-scale gene-sequencing projects, designed to decipher the genetic code of nonhuman species and, through comparison with the human genome, shed light on the complex interactions between genes that regulate normal or disease processes in humans, as well as the origins of the diverse forms of life that inhabit our planet.

More than a third of the human genome was decoded at the Genome Sequencing Center with financial support from NHGRI, a part of the National Institutes of Health (NIH).

NIH research funding at the University has more than doubled, from approximately $170 million in 1996 to $366 million in 2002. According to the U.S. Department of Commerce, every $1 million in federal research support awarded to a university generates 29 jobs in the local community.

"Washington University's investment in BioMed 21 is anticipated to attract distinguished new faculty as well as additional federal, foundation and corporate support to further enhance the economic consequences for St. Louis," Wrighton said.

New buildings

To accommodate the growth and reconfiguration of research teams associated with BioMed 21, a $150 million, 250,000 square-foot research facility is anticipated. It will be built in stages in the heart of the Medical Campus, most likely on the site of an existing parking structure at the corner of Euclid Avenue and Children's Place.

The new research building will

See **BioMed 21**, Page 6

More on BioMed 21

On Page 3

- The University is planning three new research units; the Genome Sequencing Center has been awarded a three-year grant to continue sequencing genetic codes.

On Page 6

- John F. McDonnell and the JSM Charitable Trust have endowed four new professorships; Philip Needleman and wife Sima have established a professorship to support a key leadership position.

KEVIN LOWDER

Takin' it to the streets Bob Hansman, associate professor of architecture, greets students the morning of Nov. 15 outside Simon Hall. Hansman hosted a free a bus tour of St. Louis neighborhoods and a subsequent discussion of issues relating to community development. The event was sponsored by the student groups WU Build, the campus chapter of Habitat for Humanity, and Beyond the Surface, dedicated to building bridges between the campus and St. Louis communities.

Lewis & Clark have new teammate: Robert Criss

By Tony Fitzpatrick

Lewis and Clark, meet Robert Criss, Ph.D.

A professor of earth and planetary sciences in Arts & Sciences, Criss has teamed with Lewis and Clark to provide the oldest determinations of the magnetic declination of America's interior.

Declination is the horizontal angle between true north and magnetic north. This difference arises because a compass needle aligns with local magnetic north instead of with Earth's spin axis.

Criss determined the deviations of Lewis and Clark's compass needle from true north, which is possible because the famous explorers took positional measurements with precise nautical instruments. There are plenty of data like this from ships at sea, but before 1850 practically no data were available for the North American interior.

Criss's paper, "Mid-Continental Magnetic Declination: A 200-year Record Starting With Lewis and Clark," was the cover article of the October *GSA Today*, a publication of the Geological Society of America.

When Meriwether Lewis and William Clark explored the Louisiana Territory in 1804-06, they frequently determined their position by using a sextant to read the altitude of the sun and

See **Criss**, Page 5

Not your normal book drive: Supporting overseas troops

By Andy Clendennen

Support for troops overseas manifests itself in many forms. Letters, prayers, thoughts, cookies — all have a place in a tent in hostile land.

But B.J. Johnston found a more practical way to support one of his close friends.

Johnston, associate dean of collections and departmental libraries in Olin Library, recently sent a valuable commodity to Kuwait — books.

His close friend Patricia Mance is a major in the Army Reserves 455th Transportation Detachment out of St. Louis, which had been stationed in Camp Arifjan, Kuwait, approximately 35 miles from Kuwait City.

Mance's unit was mobilized Feb. 7 in support of Operation Enduring Freedom and Operation Iraqi Freedom, trained at Fort Leonard Wood, and arrived in Kuwait March 30. (Mance and her unit just recently returned to the U.S., their tour finished for now.)

When she was mobilized, Mance left behind one of her pas-

See **Books**, Page 5

This Week In WUSTL History

Nov. 26, 1862

The University's first chancellor, Joseph Gibson Hoyt, died from tuberculosis. He was succeeded by William Chauvenet, professor of mathematics and astronomy.

This feature will be included in each 2003-04 issue of the Record *in observance of Washington University's 150th anniversary.*

Bone marrow registry created by student

By Neil Schoenherr

When Laura Seger heard there wasn't a bone marrow registry at the University, she decided to take it upon herself to start one.

That was two years ago, and since then nearly 400 donors have registered through the Washington University Marrow Registry (WUMR), the organization created by Seger, who is working toward undergraduate and graduate degrees in biomedical engineering in the School of Engineering & Applied Science.

"Marrow registry drives are so important because over 3,000 patients, including 30 in the St. Louis area, search the national registry daily for matching donors and a chance for life," Seger said. "Less than 5 million potential donors are currently on the registry, which is a very small fraction of our county's population, so the odds of finding a life-saving match are poor.

Seger

"Every addition to the registry potentially saves a life."

The third annual drive will be held at the University Feb. 3-5; the goal is to register 300 new potential donors. (For more information, see Page 2.)

"We encourage students, faculty and staff to attend the drive," Seger said. "It's an easy way to possibly save someone's life."

Seger decided to get involved in June 2001, when she attended the engineering school's Leader-Shape retreat, which encourages students to improve their com-

See **Marrow**, Page 2

Happy Thanksgiving

The *Record* will not be published next week due to the Thanksgiving holiday. Our next issue will be Dec. 5.

KEVIN LOWDER

The nine current members of Mama's Pot Roast hammed it up with 19 returning alumni during the comedy group's 10th-anniversary performance Nov. 7 in Brown Hall Auditorium.

Mama's Pot Roast: Making you laugh for 10 years

BY NEIL SCHOENHERR

"Is there an improv group on campus?"

"No, I don't think there is."

"Want to start one?"

According to legend, that conversation between two students was all it took to get Mama's Pot Roast off the ground in 1993.

The all-student comedy improv group recently celebrated its 10th year and shows no signs of slowing down.

"Pot Roast has been the best thing to happen to me in college," senior Kevin Skiena said. "I look forward to every rehearsal, and I like the fact that we're all friends outside of the group. We make each other laugh, and we really trust each other."

The nine-member troupe rehearses about five hours a week and performs one or two live shows a month, normally somewhere in the South 40.

A Mama's Pot Roast show resembles the ABC hit *Whose Line Is It Anyway?* starring Drew Carey. Audience members yell out a situation, location or action and then members of the group act it out.

All the sketches and games are rooted in improvisation.

"The audience energy at our shows is high, and we all really love performing," senior Steve Heisler said.

Heisler was involved with theater in high school but not improvisational theater. He joined the group his freshman year and credits his involvement in it with teaching him about comedy and also with giving him an outlet to reduce stress and "hang out with a wonderful group of people."

"I've definitely seen our audiences grow since I've been involved," Heisler said. "We are more mainstream, and I think anyone who comes to one of our shows will find something they enjoy."

Recently, 28 Pot Roast alumni and current members participated in the largest show in the group's history to celebrate 10 years of bringing comedy to campus. That show, held in Brown Hall, was very well attended and quite a success.

But what about the crazy name?

"As far as I know, 'Mama's Pot Roast' was made up on the spot by one of our founders when someone asked what the group was called," Skiena said.

The name stuck, and the group has come to be recognized as one of the best sources of off-the-cuff comedy on campus, although its message is sometimes misunderstood.

"We were invited to perform at an office Christmas party a couple of years ago," Heisler said. "Right in the middle of one of the games, a woman stood up and yelled, 'What's the point of all this?'

"We were sort of shocked at the time, but it made us realize that not everyone does 'get it,' and we have to do everything we can to make sure the audience understands what we are doing. I think we've really succeeded in doing that."

The next Mama's Pot Roast show will be the semiannual Knighta Komedy at 8 p.m. Dec. 9 in Brown Hall, Room 100. They've been getting ready for it all semester.

"We're really excited about the Knighta Komedy show," Heisler said. "It should be our best show of the semester."

Heisler, a psychology major in Arts & Sciences, has enjoyed his experience so much that he'd love to pursue a career in improv theater after graduation.

"I'm not sure if that will happen or not, but I do know I want to have a job working with people," he said. "I think one of the main things Mama's Post Roast has taught me is how to get along with people, and of course, make them laugh.

"I want to keep doing both after I graduate."

For more information on the troupe, go online to restech.wustl.edu/~potroast.

PICTURING OUR PAST

WUSTL ARCHIVES

This occupational therapy student in the School of Nursing gets ready to make a home visit in the 1940s. What had started as a nurse's training school evolved into a full-fledged School of Nursing under Chancellor Herbert S. Hadley (1923-27). In 1954, following several prosperous post-World War II years, the School of Nursing's three-year certificate program, in which three-fourths of the student nurses enrolled, was transferred to Barnes Hospital. In 1957, the school virtually abandoned undergraduate work to focus on the graduate programs, but with a decreasing student body it restarted the undergraduate program with limited success. Unable to arouse the interest of the School of Medicine or affiliated hospitals in supporting a collegiate program for nursing, the Board of Trustees closed the School of Nursing on June 30, 1969.

WASHINGTON UNIVERSITY IN ST. LOUIS 150 years 1853–2003
Treasuring the Past Shaping the Future

Washington University is celebrating its 150th anniversary in 2003-04. Special programs and announcements will be made throughout the yearlong observance.

Turn to media, Web for weather info

If a severe snow or ice storm causes the University to alter the normal work and/or class schedules, an announcement will be posted on the University's home page (wustl.edu) and a number of media outlets will air an announcement.

Separate announcements will be made regarding the Hilltop Campus (includes all campuses other than the Medical Campus), evening-school classes and the Medical Campus and will apply only to Washington University students, faculty and staff.

Media outlets that air such announcements are KSDK-TV Channel 5, KMOV-TV Channel 4, KTVI-TV Channel 2, KDNL-TV Channel 30, KMOX-AM (1120) and WSIE-FM (88.7).

Radio station KTRS-AM (550) has an off-air telephone snow-closing system. To access it, call 550-KTRS (5877) or 453-5555. You will be prompted to enter an ID number.

For the Hilltop Campus, the ID number is 1278; for evening classes, the number is 1440; and for the Medical Campus, it's 1439. If there is a closing or cancellation, it will be announced a few seconds after you enter the ID number.

All KTRS snow-closing announcements will be erased from the system between 2-3 p.m. To check for the following day, you will need to call after 3 p.m.

Thanksgiving to be hosted by Freemans

BY NEIL SCHOENHERR

Students not able to leave the University during Thanksgiving break will still be able to enjoy a traditional Thanksgiving dinner, thanks to the generosity of Philip M. Freeman, Ph.D., assistant professor of Classics in Arts & Sciences, and his wife, Alison.

The Freemans, the faculty family in Brookings Residential College, will provide turkey and all the fixings for several hundred undergraduates on campus during the break.

The dinner will take place at 1 p.m. Nov. 27 in Lien House. Any University student is welcome to attend.

For more information, call Philip Freeman at 935-4018.

Marrow

Student group dedicated to registration, education

– from Page 1

munities by developing a leadership project.

At the retreat, she met engineering alumna Marla Esser, who shared her story of the Pearl family — Esser's neighbors and close friends whose children, Alexandra and Matthew (now 8 and 6), were diagnosed with Fanconi anemia and required bone marrow transplants for survival.

When no matching donors were found on the national registry, Esser and many others started organizing marrow registry drives throughout the St. Louis area in order to add more potential donors to the registry.

In May 2001, Alexandra found a matching donor and received a successful transplant. Matt is still waiting for his perfect match.

"After listening to Marla's story, I volunteered to host a marrow registry drive on the University campus as my LeaderShape project," Seger said. "Working closely with Marla and a core group of four students, we hosted our first drive in November of 2001 and added 184 potential donors to the national registry."

After the success of that first drive, Seger founded the WUMR — a recognized student group devoted to marrow registration, awareness and education.

The group holds annual marrow registry drives on both the Hilltop and Medical campuses and has registered 396 potential donors. The drives are staffed by more than 50 student volunteers and provide a student discount price of $5, thanks to diligent fund-raising of Seger and others in WUMR.

A fund-raiser open to faculty and staff is the Houlihan's "You Eat, You Earn" program, through which area Houlihan's restaurants will donate 10 percent of each bill on Fridays, Saturdays and Sundays through Jan. 15 to WUMR if the diner mentions the Washington University Marrow Registry.

"We encourage everyone to get involved," Seger said.

For more information on WUMR and the steps involved in marrow registration, go online to restech.wustl.edu/~wumr.

Marrow drive Feb. 3-5

The third annual Washington University Marrow Registry drive will be Feb. 3-5 at the following times and locations:

- Feb. 3: 4-9 p.m., Friedman Lounge in Wohl Student Center;
- Feb. 4: 10 a.m.-4 p.m., The Gargoyle in Mallinckrodt Student Center; and
- Feb. 5: 11 a.m.-6 p.m., McDonnell Pediatric Research Building, Medical Campus.

The drive is open to all students, faculty, staff, and community members. Students will be tested for $5 and non-students for $25. Faculty and staff are especially encouraged to attend, either as donors or volunteers. The group will also accept personal donations to aid in discounting the testing fee.

The test is just a simple blood test. Those who attend the drive will only be asked to donate when a patient matches their marrow type.

Record

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Washington University in St. Louis

School of Medicine Update

Unveiling BioMed 21

GSC receives more than $130 million

Grant program supports sequencing of chicken, chimpanzee, other organisms

BY MICHAEL C. PURDY

The Genome Sequencing Center (GSC) has been awarded a three-year grant to continue sequencing the genetic codes of the chicken, the chimpanzee and the mouse and will start to sequence several other organisms.

First-year funding for the GSC through the new grant program will be $49 million. The estimated three-year funding will be at least $130 million.

The grant is one of five awarded by the National Human Genome Research Institute (NHGRI) to U.S. sequencing centers. The program, called the Large-Scale Sequencing Research Network, will carry out a new generation of large-scale projects designed to maximize the promise of the Human Genome Project and dramatically expand the understanding of human health and diseases.

"This grant lets us continue to do very exciting and relevant biology," said Richard K. Wilson, Ph.D., director of the GSC and professor of genetics. "The data we'll be producing as a part of this new effort will allow us to ask very fundamental questions about human health and disease.

"It will be a key part of moving into the next phase of genomics and medicine: The use of the information and technology from the Human Genome Project to diagnose, treat and prevent illness."

The GSC has produced several unique accomplishments, including the complete sequence of the first human chromosome — chromosome 22 — and several other chromosomes (2, 4, 7 and Y). The center also produced the first genome of a multicellular organism, the microscopic worm *C. elegans*, as well as the first plant, the flowering mustard *Arabidopsis thaliana*.

Over the next three years, the five centers in the NHGRI program will mount a major new effort to gather genetic data on several species in a fraction of the time and at a fraction of the cost of producing the human genome.

"In large part, our new funding can be seen as a reward for the advances in efficiency we've made in previous years," Wilson said. "It took several hundred million dollars to map and sequence the human genome. Because of efficiency improvements in many areas since the Human Genome Project began, it will take less than $50 million to sequence each genome that we'll work on as a part of NHGRI's new network."

In addition to its work on the chicken, mouse and chimpanzee genomes, the GSC will spend the upcoming year sequencing the genetic code of a flatworm, a few species of fruit flies and the South American gray short-tailed opossum.

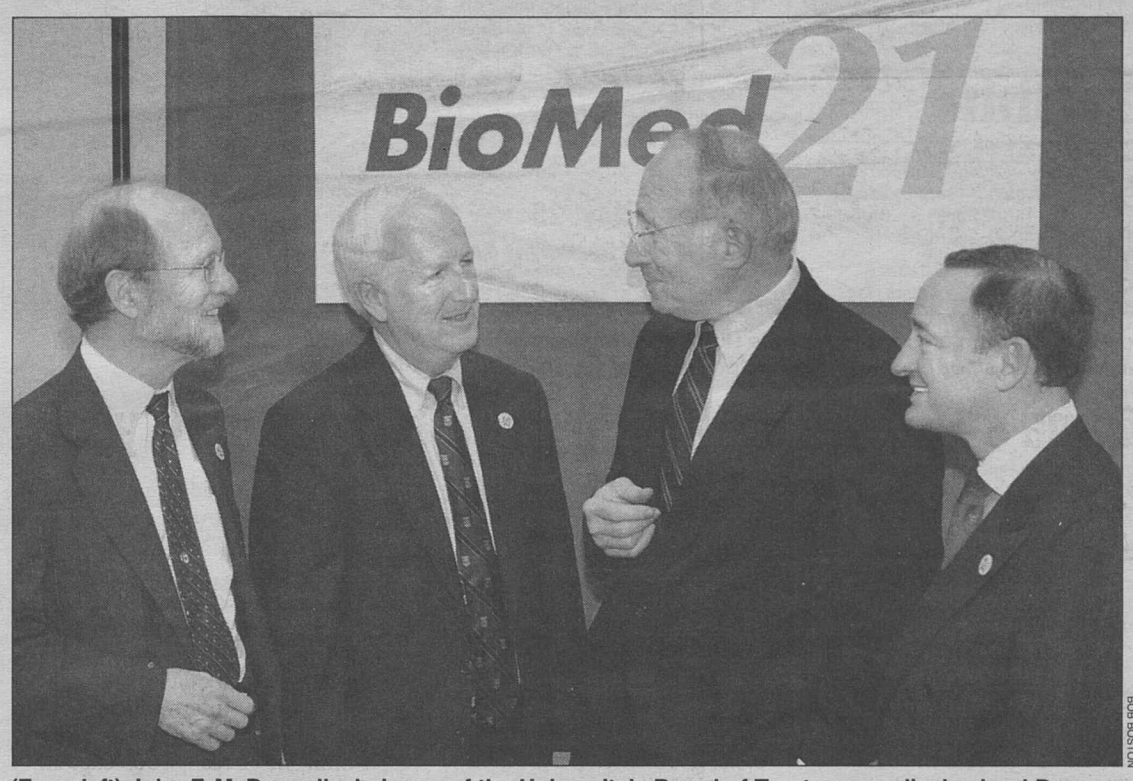
Additional organisms may be added toward the end of the first year, according to Wilson. NHGRI funding for the program will last three years, with annual renewal grants determined on a competitive basis.

"Genome sequences are the foundation of good biology — to ask the important questions of biology, you need to have high quality genome sequences," Wilson said. "This new program lets us continue supplying and using those sequences."

Besides the human, other genomes that are already sequenced include the rat, baker's yeast, two fruit flies and the bacterium *E. coli*.

Comparing different organisms' genomes helps researchers zero in on areas in the genetic code where the most functionally important genes are located. In addition, the insights gained from comparing an organism's genome to the human genome often can be crucial when using that organism to model a human disease.

"Given the power of such comparisons, there is a growing hunger among biologists and medical researchers for free and publicly available sequence data on a wide variety of organisms," said NHGRI Director Francis Collins, M.D., Ph.D. "Our sequencing centers will feed that hunger. And the dramatic decrease in the costs of genome sequencing, spurred on by the Human Genome Project, makes production of this data a bargain by any estimate."



BOB BOSTON

(From left) John F. McDonnell, chairman of the University's Board of Trustees; medical school Dean Larry J. Shapiro, M.D.; University Trustee Philip Needleman, Ph.D.; and Chancellor Mark S. Wrighton discuss the next generation of biomedical and genomic research at the BioMed 21 news conference Nov. 17. McDonnell's and Needleman's generous gifts will endow new University professorships.

BioMed 21's three units

New research unites disciplines, facilitates treatment advances

BY MICHAEL C. PURDY

To meet BioMed 21's goal of applying data from the Human Genome Project to rapidly advance diagnosis and treatment of human illness, the University is planning three new research units: a Genome Sciences and Human Genetics Program, a Center for Biological Imaging and a Division of Clinical Sciences.

The units, which will involve members of the Medical and Hilltop campuses, will address challenges of the post-genomic era of biomedicine by bringing faculty from biology, physics, engineering and computer sciences together to collaboratively study how complex networks of genes and their products interact in health and in disease.

The research units will also accelerate the processes that allow clinicians to use the latest scientific insights to more accurately diagnose disease, develop new treatments, monitor the effects of treatments and seek new ways to prevent illness.

At the heart of all the new units is a sense that biomedical research is entering a remarkably fast-paced period of pioneering advances.

"This is a genuinely exciting time for medicine," said R. Gilbert Jost, M.D., the Elizabeth Mallinckrodt Professor, director of the Mallinckrodt Institute of Radiology and head of the Department of Radiology. "Probably more discoveries are going to take place in the next decade than have taken place in the last five decades."

Jeffrey I. Gordon, M.D., the Dr. Robert J. Glaser Distinguished University Professor and head of the Department of Molecular Biology and Pharmacology, compared the excitement of the current era of biomedicine to when Francis Crick and James Watson identified DNA as the carrier of hereditary information 50 years ago.

"During the past five years, we have arrived at the point where we have looked inside ourselves and seen the genetic blueprint that defines our species," Gordon said. "This knowledge is propelling us toward a level of molecular understanding of ourselves as a life form that was previously limited to simpler organisms.

"We have an unprecedented opportunity to apply this knowledge to understand the genetic and biochemical basis of human health and disease."

As one of the five founding members of the **Genome Sciences and Human Genetics Program**, Gordon will move his laboratory into renovated research space in the same building that houses the GSC.

The move is part of what Gordon calls "creating a common intellectual space" where scientists with multiple specialties can join forces to study how biological systems function at multiple levels.

Future plans for the program include core facilities for finding mutations in human DNA, rapidly assessing and comparing the activity levels of thousands of genes in healthy and diseased tissues and creating animal models of human diseases.

Organizers hope the program will lead to the identification of new biomarkers, key proteins that can be used to learn more about the genetic and environmental factors that cause conditions like cardiovascular disease, diabetes and cancer. They want to use biomarkers to customize treatments to the unique mix of disease-causing factors present in any given patient.

Key support for this work will come from the **Center for Biological Imaging**. Jost said the center will help biological imaging progress from focusing on gross anatomy — broken bones and tumors, for example — to the delicate molecular interactions that underlie cellular and genetic processes.

"Today, we're diagnosing and treating diseases when they become clinically evident," Jost said. "Tomorrow, we will be looking into who is genetically predisposed to specific conditions. We will be visualizing the underlying mechanisms that bring about those diseases, which will allow us to develop more effective treatments."

In the Center for Biological Imaging, researchers will work to develop new and improved imaging techniques for visualizing processes at the cellular level, including equipment capable of studying those processes at the same level of detail in animal models of disease.

Jost and others have a second BioMed 21 imaging initiative still on the drawing boards. They hope to create a new clinical imaging facility at Barnes-Jewish Hospital for taking the imaging concepts discovered in the laboratory and applying them to humans. The new state-of-the-art facility will be dedicated to clinical imaging research, eliminating the need for researchers to compete for time on scanning units.

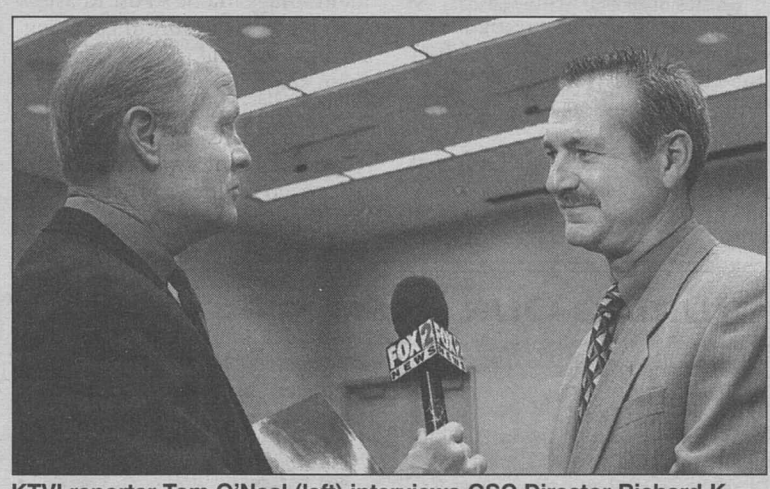
The research imaging facility will be closely affiliated with the University's third new research unit, the **Division of Clinical Sciences**. Modeled after the University's successful Division of Biology and Biomedical Sciences, the division will unite many departments in the establishment and maintenance of shared facilities that support patient-oriented research.

Kenneth S. Polonsky, M.D., the Adolphus Busch Professor and chairman of the Department of Medicine, envisions the division encompassing the University's many clinical departments and including "broad participation" from its basic science departments.

The division will maintain and expand current facilities for clinical trials at the Medical Campus and help develop new resources for clinical research, including small-scale genetic sequencing facilities.

Another primary mission will be to increase medical students' exposure to clinical trials, ensuring that future generations of researchers are well versed in translating basic research into clinical advances.

"We'll be expanding coursework relevant to clinical research, including disciplines such as biostatistics, clinical trial design and clinical epidemiology," Polonsky said. "We'll also be expanding the opportunities for clinical fellows, residents and medical students to obtain hands-on research experience in the laboratories of faculty who are doing clinical investigations."



BOB BOSTON

KTVI reporter Tom O'Neal (left) interviews GSC Director Richard K. Wilson about the research units at the BioMed 21 news conference.

University Events

Portia's Ring • Gene Silencing • T'is the Season

"University Events" lists a portion of the activities taking place at Washington University Nov. 21-Dec. 11. Visit the Web for expanded calendars for the Hilltop Campus (calendar.wustl.edu) and the School of Medicine (medschool.wustl.edu/calendars.html).

Exhibits

150 years ***History of Adult Education at Washington University, 1854-2004.*** Through May 31. January Hall, Rm. 20. 935-4806.

150 years ***Influence 150: 150 Years of Shaping a City, a Nation, the World.*** Through Dec. 7. Gallery of Art. 935-4523.

Inscriptions of Time/Topographies of History: The Photographs of Alan Cohen. Through Dec. 7. Gallery of Art. 935-4523.

Matthew Carter Exhibit. Through Nov. 28. Des Lee Gallery, 1627 Washington Ave. 621-8735.

150 years ***New Beginnings: The First Decade of the Washington University Medical Campus, 1915-1925.*** Through May 31. Glaser Gallery, Becker Medical Library, 7th Fl. 362-4236.

Lectures

Friday, Nov. 21

9:15 a.m. Pediatric Grand Rounds. Philip R. Dodge Lecture. "Neurogenic Radial Glia in Cortical Development." Arnold R. Kriegstein, John and Elisabeth Harris Professor of Neurology, Columbia U. Clopton Aud., 4950 Children's Place. 454-6006.

Noon. Cell Biology & Physiology Seminar. "G Protein Signaling: From Yeast Sex to Hypertension." Kendall J. Blumer, prof. of cell biology & physiology. McDonnell Medical Sciences Bldg., Rm. 426. 362-3964.

1:30 p.m. Lifelong Learning Institute Lecture. "Portia's Ring — Property and Personhood in *The Merchant of Venice*." Nancy Wright, prof. of English, U. of Newcastle, Australia. West Campus Conference Center, 7425 Forsyth Blvd. 935-4237.

4 p.m. Anatomy & Neurobiology Seminar. "Touch Sensitivity in *C. elegans*." Martin Chalfie, Kenan Professor in Neurobiology and Behavior, Columbia U. McDonnell Medical Sciences Bldg., Rm. 928. 362-7043.

Monday, Nov. 24

Noon. Work, Families, and Public Policy Brown Bag Seminar Series. "Moving Infertility Treatment From the Bedroom to the Operating Room: Does Competition Outperform Insurance Coverage?" Barton Hamilton, prof. of economics, management and entrepreneurship. Eliot Hall, Rm. 300. 935-4918.

4 p.m. Sesquicentennial Biology Seminar. "Coat Protein Mediated Resistance: From Discovery at WU in '85 to Mechanisms of Action in '03." Roger Beachy, dir., Donald Danforth Plant Science Center. Rebstock Hall, Rm. 322. 935-6850.

4 p.m. Immunology Research Seminar Series. "Complex Activation of Toll-like Receptors Drives Systemic Autoimmune Disease." Ann Marshak-Rothstein, prof. of microbiology, Boston U. Eric P. Newman Education Center. 362-2763.

4 p.m. Psychology Colloquium. "The Common Neural Bases of the Experience and Self-regulation of Physical Pain, Social Pain, and Social Threat: A Social Cognitive Neuroscience Approach." Matt Leiberman, asst. prof. of psychology, U. of Calif., Los Angeles. Psychology Bldg., Rm. 216 A&B. 935-6520.

Tuesday, Nov. 25

Noon. Molecular Microbiology & Microbial Pathogenesis Seminar Series. "Geminiviruses, a Great Model to Study Gene Silencing in Plants." Claude Fauquet, head, International Lab. for Tropical Agricultural Biotechnology, Donald Danforth Plant Science Center. Cori Aud., 4565 McKinley Ave. 362-3692.

Monday, Dec. 1

Noon. Molecular Biology & Pharmacology Seminar. "Fatty Acid Metabolism, Insulin Resistance, and Vascular Dysfunction in Diabetes." Clay Semenkovich, prof. of medicine and of cell biology & physiology. Co-sponsored by the Siteman Cancer Center. South Bldg., Rm. 3907, Philip Needleman Library. 362-0183.

4 p.m. Immunology Research Seminar Series. "Hematopoietic and Endothelial Cell Development From ES Cells." Kyunghee Choi, assoc. prof. of pathology & immunology. Eric P. Newman Education Center. 362-2763.

6 p.m. Architecture Monday Night Lecture Series. "Informal." Cecil Balmond, engineer, ARUP Associates, London. (5:30 p.m. reception, Givens Hall.) Steinberg Hall Aud. 935-6200.

Tuesday, Dec. 2

Noon. Molecular Microbiology & Microbial Pathogenesis Seminar Series. "Entry, Assembly, and Intracellular Movement of Poxviruses: Implications for Design of a Safe and Effective Smallpox Vaccine." Bernard Moss, chief of the laboratory of viral diseases, National Institutes of Health. Cori Aud., 4565 McKinley Ave. 747-2134.

Wednesday, Dec. 3

Noon-1:30 p.m. History & Philosophy of Science Seminars. "Harvey Cushing and the History of Neurosurgery in the United States." Sam Greenblatt, prof. of neurosurgery and of clinical neurosciences, Brown U. Life Sciences Bldg., Rm. 202. 935-6808.

Thursday, Dec. 4

Noon. Genetics Seminar Series. "Comparative Genomics and Functional Analyses for Mapping Gene Networks." Barbara Wold, prof. of biology and biochemistry, Cal. Inst. of Technology. McDonnell Medical Sciences Bldg., Rm. 823. 362-2139.

12:10-12:50 p.m. Wellness Connection. "T'is the Season: Coping With Stress During the Holidays." Darryl Wise, People Resources. Mallinckrodt Student Center, Lambert Lounge. 935-5990.

1:10 p.m. George Warren Brown School of Social Work Fall Lecture Series. "Restorative Justice: A Road Map for the 21st Century." Mark Umbreit, exec. dir., Center of Restorative Justice and Peacemaking and prof. of social work, U. of Minn. Brown Hall Lounge. 935-6661.

4 p.m. Center for the Humanities Book Colloquium. "Celebrating our Books, Recognizing Our Authors." William H. Danforth, chancellor emeritus and vice chairman, Board of Trustees, opening remarks. Readings by Pascal Boyer, Henry Luce Professor of Individual and Collective Memory, and Rebecca Messbarger, assoc. prof. of Romance languages. Women's Bldg. Formal Lounge. 935-5576.

4-5 p.m. Ophthalmology & Visual Sciences Seminar. "Alpha-crystallin and sHSP Function." Usha Andley, assoc. prof. of ophthalmology. Maternity Bldg., Rm. 725. 362-1006.

Friday, Dec. 5

9 a.m.-5 p.m. Radiation Oncology CME Seminar. "ASTRO Review Seminar." Co-sponsored by the Mallinckrodt Inst. of Radiology, Siteman Cancer Center and Barnes-Jewish Hosp. Cost: $95. To register, call 362-6891.

Noon. Cell Biology & Physiology Seminar. "The Role of Rho GTPase and Lethal Giant Larvae Families of Proteins in Exocytosis and Cell Polarity." Patrick J. Brennwald, assoc. prof. of cell & developmental biology, U. of N.C., Chapel Hill. McDonnell Medical Sciences Bldg., Rm. 426. 747-4233.

4 p.m. Anatomy & Neurobiology Seminar. W. Thomas Thach, prof. of neurobiology. McDonnell Medical Sciences Bldg., Rm. 928. 362-7043.

Monday, Dec. 8

Noon. Molecular Biology & Pharmacology. "Mouse Models of Prostate Carcinogenesis." Cory Abate-Shen, prof. and chair of advanced biotechnology & medicine, Rutgers U. South Bldg., Rm. 3907, Philip Needleman Library. 362-0183.

Noon-1 p.m. Work, Families, and Public Policy Seminar Series. "Who Marries Whom and Why." Aloysius Siow, prof. of economics, U. of Toronto. Eliot Hall, Rm. 300. 935-6691.

4 p.m. Biology Seminar. "*Epulopiscium spp*: Bacteria Living Large." Esther Angert, asst. prof. of microbiology, Cornell U. Rebstock Hall, Rm. 322. 935-7888.

4 p.m. Immunology Research Seminar Series. "The Regulation of CD4 Memory." Susan Swain, dir, Trudeau Inst., N.Y. Eric P. Newman Education Center. 362-2763.

Tuesday, Dec. 9

Noon. Molecular Microbiology & Microbial Pathogenesis Seminar Series. Andreas J. Baumler, assoc. prof. of medical microbiology and immunology, Texas A&M U. Cori Aud., 4565 McKinley Ave. 286-2891.

Wednesday, Dec. 10

4:30 p.m. Physical Therapy Professional Conclave. 4444 Forest Park Blvd., Rm. B108/B109. 286-1406.

5 p.m. Medical Humanities & Social Sciences. "The Female Gaze: Anatomist Anna Morandi Manzolini's Study of the Male Reproductive System and Genitalia." Rebecca Messbarger, assoc. prof. of Romance languages and literatures. Busch Hall, Rm. 113, Cohen Lounge. 935-5340.

Thursday, Dec. 11

Noon. Genetics Seminar Series. "Transvection: When Homologues Meet." Ting Wu, dept. of genetics, Harvard U. McDonnell Medical Sciences Bldg., Rm. 823. 362-2139.

4 p.m. Ophthalmology & Visual Sciences Seminars. "Demonstration of Efficacy on Anti-glaucoma Medication in African Americans." Mae Gordon, prof. of ophthalmology and visual sciences. Maternity Bldg., Rm. 725. 362-1006.

"Celebrating Our Books, Recognizing Our Authors" Dec. 4

BY LIAM OTTEN

The University's Center for the Humanities in Arts & Sciences will present "Celebrating Our Books, Recognizing Our Authors," its second annual faculty book colloquium, at 4 p.m. Dec. 4 in the Women's Building Formal Lounge.

The event will honor the work of scholars from across the arts and sciences disciplines.

In conjunction with the event, the Campus Store in Mallinckrodt Student Center will be selling books by colloquium participants, who will be available after the colloquium to sign their works.

William H. Danforth, chancellor emeritus and vice chairman of the Board of Trustees, will present opening remarks. In addition, Pascal Boyer, Ph.D., the Henry Luce Professor of Individual and Collective Memory in Arts & Sciences, and Rebecca Messbarger, Ph.D., associate professor of Romance languages in Arts & Sciences, will read from their publications and take questions.

Boyer is the author of *Tradition as Truth and Communication* (1990), *The Naturalness of Religious Ideas* (1994) and *Religion Explained: The Evolutionary Origins of Religious Thought* (2001). His scholarship combines anthropological fieldwork and psychological experiments and aims to describe the psychological foundations of culture.

Messbarger is the author of *The Century of Women: Representations of Women in Eighteenth-Century Italian Public Discourse* (2002), which the Italian Cultural Institute of Chicago recently nominated for the International Flaiano Prize, awarded by the Ministry of Italian Culture. Messbarger is writing a book on the life and work of 18th-century Bolognese artist and anatomist Anna Morandi Manzolini.

The event is free and open to the public. For more information, call 935-5576.

Music

Saturday, Nov. 22

8 p.m. Faculty Recital. Alla Voskoboynikova, piano. Ridgley Hall, Holmes Lounge. 935-4841.

Sunday, Nov. 23

3 p.m. Washington University Symphony Orchestra Concert. *Piano Concerto in A Major, K. 488*, of W.A. Mozart. Dan Presgrave, dir., Graham Chapel. 935-4841.

Sunday, Dec. 6

8 p.m. Chamber Choir of Washington University Concert. "Music of the Human Spirit." John Stewart, dir. Graham Chapel. 935-4841.

On Stage

Friday, Nov. 21

8 p.m. OVATIONS! Ronald K. Brown/EVIDENCE. (Also 8 p.m. Nov. 22 and 1 p.m. Nov. 23.) Cost: $28; $23 for senior, students, WUSTL faculty and staff; $14 for children under 12 and WUSTL students. Edison Theatre. 935-6543.

Saturday, Nov. 22

11 a.m. ovations! for young people. Ronald K. Brown/EVIDENCE. Cost: $7. Edison Theatre. 935-6543.

Friday, Dec. 5

8 p.m. Performing Arts Department Performance. *dance@stl.art.* Washington University Dance Theatre. (Also 8 p.m. Dec. 6 and 2 p.m. Dec. 7.) Cost: $12, $8 for seniors, WUSTL faculty, staff, and students. Edison Theatre. 935-6543.

Sports

Saturday, Nov. 22

7 p.m. Volleyball vs. Ohio Northern University. NCAA Division III Tournament Quarterfinal. Cost: $5; $3 for students; WUSTL students free with ID. 935-4705.

Tuesday, Nov. 25

6 p.m. Women's Basketball vs. Webster U. Athletic Complex. 935-4705.

8 p.m. Men's Basketball vs. Webster U. Athletic Complex. 935-4705.

Saturday, Nov. 29

3 p.m. Women's Basketball vs. Rose-Hulman Inst. Annual McWilliams Classic Tournament. Athletic Complex. 935-4705.

Friday, Dec. 5

8 p.m. Men's Basketball vs. Claremont-Mudd-Scripps. Annual Lopata Classic Tournament. Athletic Complex. 935-4705.

Tuesday, Dec. 9

7 p.m. Women's Basketball vs. Maryville U. Athletic Complex. 935-4705.

And more...

Friday, Nov. 21

7 p.m. Gallery of Art Public Exhibition Tour. Led by student docents. Gallery of Art. 935-4523.

Saturday, Nov. 22

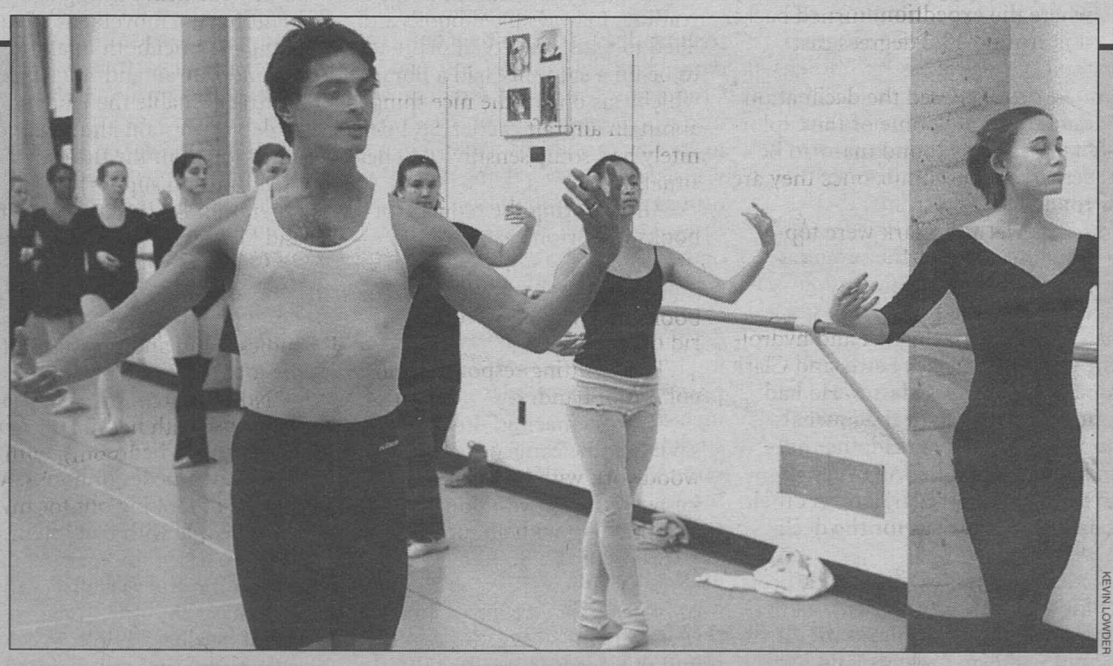
7:30 p.m. Black Alumni Council Scholarship Benefit. "An Evening With Nancy Wilson and Ramsey Lewis." Nancy Wilson, jazz vocalist, and Ramsey Lewis, pianist. Cost: $75 for concert, $100-$120 for concert and reception. Community Music School, 560 Trinity Ave., E. Desmond Lee Concert Hall. 935-9676.

Monday, Dec. 1

8 p.m. Writing Program Reading Series. Readings by students in the Master of Fine Arts in Writing program. (Also 8 p.m., Dec. 2 & 3.) Duncker Hall, Rm. 201, Hurst Lounge. 935-7130.

Friday, Dec. 5

7 p.m. Gallery of Art Public Exhibition Tour. Led by student docents. Gallery of Art. 935-4523.



KEVIN LOWDER

Style and grace Carlos Fittante, a celebrated New York choreographer and performer of both Baroque and Balinese dance, leads a recent master class for the Performing Arts Department in Arts & Sciences' Dance Program. Fittante set a number of Baroque dances during his two-week residency, several of which premiered as part of a Nov. 9 concert by the Kingsbury Ensemble, the University's period music group. Fittante's choreography will be reprised Dec. 5-7 as part of *dance@stl.art*, this year's Washington University Dance Theatre concert.

Stanford's McCarty to give Ryckman Lecture

Perry L. McCarty, Ph.D., of Stanford University's Department of Civil and Environmental Engineering, will deliver the inaugural Ryckman Lecture at 3 p.m. today in Lopata Hall, Room 101.

McCarty will speak on "Precautionary Approach for Toxic Chemicals in the Environment — Experiences and Concepts in the Making."

The Ryckman Lecture is sponsored by the Washington University Environmental Engineering Science Program and is part of the Sesquicentennial Enviromental Initiative.

Sports

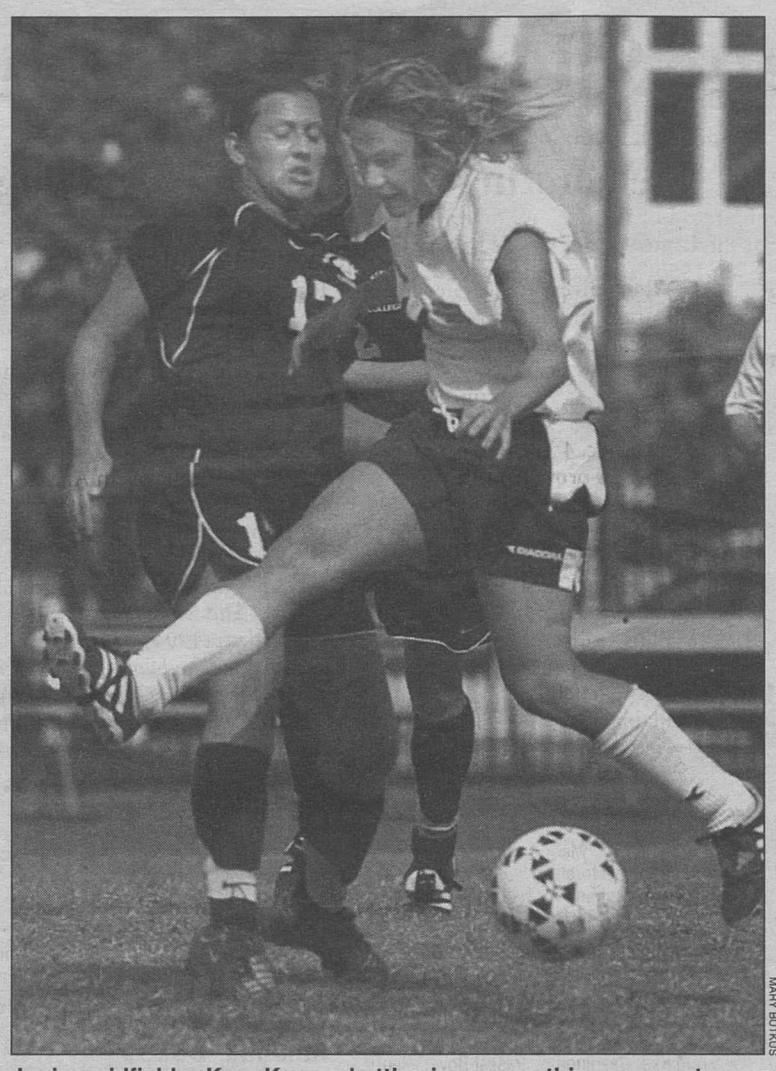
Volleyball team rolls on; will host Elite Eight match Nov. 22

The volleyball team, No. 2 in the country and the top seed in the NCAA Tournament Division III Volleyball Central Regional, rallied to defeat Wartburg College, 3-2, in the regional championships Nov. 15 at the Field House.

Senior Katie Quinn led the Bears with a season-high 25 kills, and she combined with sophomore Kara Liefer to set up the match-winning point in the decisive fifth game. Trailing 13-14 in the final game, Liefer set up Quinn for a kill through the middle of the Knights' defense. With a 15-15 tie, Wartburg's Sarah Olsen set Dia Dohlman for the potential lead. Instead, Quinn and Liefer turned Dohlman away to give the Bears a one-point advantage. Junior Colleen Winter ended the match with her 18th kill.

Liefer totaled a career- and team-season-high 70 assists, the fourth-highest total in WUSTL NCAA Tournament history and just one assist shy of tying the Field House record. The Bears made the final by defeating Fontbonne University, 3-1, the day before.

Washington U. (35-3) will face Ohio Northern University in the Elite Eight at 7 p.m. Nov. 22 at the Field House.



MARY BUTKUS

Junior midfielder Kara Karnes battles in a game this season at Francis Field. Karnes had six goals and three assists this year for the Bears, who finished 14-3-3, 5-1-1 in the University Athletic Association.

On the Web

For complete sports schedules and results, go to **bearsports.wustl.edu**.

Other updates

The No. 7 women's soccer team's season ended Nov. 14 as the Bears suffered a 1-0 loss at No. 16 Wheaton College in the second round of the NCAA Division III Tournament in Wheaton, Ill. Junior Sarah Johnson headed home a cross from sophomore Mary Doleshal to put the Thunder ahead; the goal was Johnson's 20th of the season.

In the second half both teams had few scoring changes, with the Bears having the best opportunity with 15 minutes remaining. After freshman Talia Bucci beat two Wheaton defenders into the box, she passed off to sophomore Megan Morley, whose shot from five yards out went off the crossbar.

Two days earlier, the Bears posted a 4-0 win over Lakeland College in the first round of the NCAA Tournament. Washington U. outshot Lakeland 13-0 in the first half, and managed to get one by Muskie goalie Allie Weiss in the 39th minute. Bucci corralled the rebound from sophomore Kelly Jung and fired it into the back of the net for her second goal of the season.

The win marked the 11th shutout of the season for WUSTL, which tied a school record. The Bears also notched 11 shutouts in 1990, 1992 and 1998.

The **men's** and **women's cross country** teams competed at the NCAA Midwest Regionals Nov. 15 in Eau Claire, Wis. Junior Maggie Grabow qualified for the NCAA Championships on the women's side to lead the Bears. Washington U.'s women's squad narrowly missed a bid to the Championships, tying the University of Chicago for fourth place with 142 points. The top four teams advance to the NCAA Championships, and the Maroons won the tiebreaker as three of their top five runners recorded better times than three of the Bears' top five. the University of Wisconsin-Stevens Point took the team title with 76 points. On the men's side, the Bears tied for seventh of 32 teams with 217 points, while the University of Wisconsin-Oshkosh won the team title with 35 points. Grabow will run in the NCAA Championships Nov. 22.

The **men's** and **women's swimming and diving** team combined to win 18 of 26 events en route to a sweep of Illinois Wesleyan University Nov. 15 at Millstone Pool. On the women's side, sophomore Tracey Hendrickson won two events as the Bears won 153-84. Sophomore Michael Slavik and freshman David Stein also won a pair of events as the men posted a 125-96 win.

Campus Store sale Dec. 3: 30 percent off

BY NEIL SCHOENHERR

The Campus Store in Mallinckrodt Student Center will again be offering a special incentive for holiday shopping this season.

The annual Faculty & Staff Appreciation Event will be from 3-8 p.m. Dec. 3 and will feature a 10 percent discount in addition to the standard 20 percent faculty/staff discount. A University faculty/staff ID is required to receive the discount.

The additional discount is good for all in-stock regular- and sale-priced apparel, gifts, supplies and general books.

It does not apply to music, DVDs, *New York Times* best sellers, software, course books and periodicals. The discount cannot be combined with any other offers.

This year the event will feature the University's own G. Scott Robinson performing from 4-7 p.m.

Robinson, a systems programmer in the Division of Computing & Communications, is an accomplished guitarist. His CD *Plenty Indeed for My Two Hands To Do* will be available.

There will also be complimentary refreshments and drawings for a night's stay at The Ritz-Carlton St. Louis hotel and the Cheshire Lodge.

For more information, call 935-5580.

Symphony orchestra to perform Nov. 23

BY LIAM OTTEN

The Washington University Symphony Orchestra will be joined by Amelea Kim, winner of the third annual Young Artist Piano Concerto Competition, for a performance at 3 p.m. Nov. 23 in Graham Chapel.

The competition, sponsored by the Department of Music in Arts & Sciences, selects winners in two divisions.

Kim, 13, a student at Crestwood Junior High, won the Junior High Division. Her piano instructor is Jennifer Lim.

In addition, Christopher Yost, 17, a home-school student from Lake St. Louis, Mo., won the High School Division. His piano instructor is Malita Weiss.

Yost will perform in the spring with the Washington University Jazz Band.

Dan Presgrave, instrumental music coordinator in the music department, conducts the 70-plus-member orchestra.

The program will include Felix Mendelssohn's *The Hebrides Overture (Fingal's Cave)* and Jean Sibelius' *Symphony No. 2 in D Major*. Kim will perform as soloist on the first movement of Wolfgang Amadeus Mozart's *Piano Concerto In A Major, K. 488*.

The concert is free and open to the public. For more information, call 935-4841.

Books

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sions — books, all sizes, shapes and ages — in her library she shares with her husband, Stephen, one of Johnston's closest friends since childhood. Stephen was also mobilized with his reserve unit, to Heidelberg, Germany, but returned stateside before his wife.

"Through e-mail, I asked (Patricia) what could we do," Johnston said. "She said the biggest thing over there was books. Most of the people involved in a war have some down time, but by being in a tent in the desert, if you think about it, it's not like she can check out a jeep and run to town to the library or bars.

"She was often reading three books a week, and she said books were the most important thing."

Books have always been a big part of Johnston's life as well, dating back to when he served aboard the USS *John F. Kennedy* in the late 1960s and early 1970s.

"I know how great it was just to get mail," he said. "I mean, send me your junk mail, send anything, it was great. In terms of reading, I always liked books and liked to read, but I was fortunate to be on a ship that had a library, which was one of the nice things about an aircraft carrier. So I definitely had some sensitivity to her situation."

After hearing the request for books, Johnston formulated a plan and asked other library employees to pass along any books they were looking to get rid of.

The resulting response almost got out of hand.

"It was amazing," Johnston said. "People came out of the woodwork with books. I don't know everyone who donated, but we ended up with about five big boxes of books. Every day I'd come and there'd be a grocery bag of paperbacks. We have a book reviewer who gets galley copies, and those would be passed along.

"People who work here tend to be book readers. We shipped out several hundred paperbacks, and I still have some books remaining. The support from the library staff in helping pull this all together was amazing."

When the books arrived, Mance said it was like Christmas, Easter and Halloween all rolled into one.

"We have a couple of areas where we just place the books on tables and whoever comes by first gets first dibs," she said via e-mail while still in Kuwait. "When they are finished with them, they just bring them back to where they found them or pass them on to their friends. They go like hotcakes!

"When the shipment arrived, it was like kids in candy store. Everybody in my immediate office gathered around and wanted to see first before I put them out for anyone to grab."

Mance is a procuring contracting officer assigned to the Southwest Asia Contracting Command as part of the Principle Assistant Responsible for Contracting (PARC) Office. As such, she holds a $10 million warrant that allows her to enter into contracts for the U.S. government up to that dollar amount.

Her main responsibility is to award and administer contracts to provide heavy lifting equipment for the movement of cargo and personnel both in and around Kuwait and Iraq. These contracts enable the United States to deploy, sustain and redeploy allied forces in the theater of operations in support of Operation Enduring Freedom and Operation Iraqi Freedom.

Clearly, then, a few lighthearted books helped break the monotony of daily exercising, endless sand and pressures of the job.

Now, though, she is back in her house with her library (officially a spare bedroom), with boxes upon boxes of books. And instead of looking out for mysterious people with bad intent, she can sit back in the comfort of her own home and read about them.

"I have about 60 copier boxes full of hardback books in our extra bedroom," she said. "Most of my collection consists of murder-mysteries, but nothing really heavy."

Which, after what she's been through the past 10 months, is just about the right pace.

Criss

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the North Star. When this information is combined with their compass measurements, the difference between true north and magnetic north can be calculated.

Maps need to be referred to true north because the direction of magnetic north not only varies from place to place, but it also fluctuates with the movement of molten iron in the Earth's core. In contrast, the geographic north pole is constant.

Criss gave the exploration journals a close geographer's reading, gleaning data on the altitude and compass direction of the sun and North Star.

He used tables to determine the true location of the sun and star on various dates in the early 1800s. He then compared the data from each location to determine how much the compass needle deviated from true north.

He found that the magnetic declination near St. Louis has changed from an azimuth of 7.7 degrees east of north to 0 degrees today. The azimuth is a horizontal angle measured from a vertical plane.

He found that the magnetic pole was close to 19.4 degrees east at Cape Disappointment, Wash., where the expedition turned back; it is around 18.2 degrees east today.

Criss also used the declination data to correct some of the explorers' maps and found many to be remarkably accurate, once they are rotated.

"Lewis and Clark were top-notch scientists who were versed in surveying and celestial navigation" Criss said.

Criss, a geochemist and hydrologist, often makes Lewis and Clark references in his classes. He had long been a fan of the journals.

The closer he read, the more obvious the question became: Did Lewis and Clark correct their compass readings for the declination?

"I think it became too difficult for them to do, what with gathering other data, coping with unruly and uncharted waters, and just plain surviving," he said. "It's important to have the data corrected because they can help geologists improve models of the variation of Earth's magnetic field over time."

Campus Watch

The following incidents were reported to University Police **Nov. 12-18**. Readers with information that could assist in investigating these incidents are urged to call 935-5555. This information is provided as a public service to promote safety awareness and is available on the University Police Web site at police.wustl.edu.

Nov. 17

2:09 a.m. — An African-American male, 6 foot 2 inches to 6 foot 4 inches tall, between 20-30 years old, wearing a dark-brown coat and a black stocking cap, demanded a person's wallet at knifepoint outside The Village No. 3 East. The suspect left the area in a dark vehicle, with a square-back body style.

9:51 p.m. — A person stated he left his coat on the coat rack inside the weight room in the Athletic Complex. When he returned for his coat, he found that an unknown person had taken it.

Additionally, University Police responded to 10 reports of larceny, three reports of property damage, and one report each of disturbance, suspicious person, harassment and burglary.

McDonnell, JSM Charitable Trust endow four professorships

BY KIMBERLY LEYDIG

John F. McDonnell and the JSM Charitable Trust have awarded the School of Medicine $6 million to endow four new professorships at the medical school in conjunction with the BioMed 21 initiative.

Chancellor Mark S. Wrighton and Larry J. Shapiro, M.D., executive vice chancellor for medical affairs and dean of the medical school, announced the gift.

"Members of the McDonnell family, personally and through the James S. McDonnell Foundation and the JSM Charitable Trust, have been extremely supportive of Washington University for many years," Wrighton said. "Their incredible generosity continues to play a critical role in the advancement of education and research at the University."

John McDonnell, the youngest son of honored aerospace pioneer James S. McDonnell, is the chairman of the University's Board of Trustees and has served on the board since 1976. The McDonnell family and the JSM Charitable Trust have a deep interest in scientific research, and their support of the University over the years has been extraordinarily generous.

"I can't imagine a more appropriate gift than endowing professorships to support the recruitment of new faculty members who will apply genetics to improve our quality of life," John McDonnell said. "With initiatives like BioMed 21 and the resourcefulness and insight of Washington University's renowned faculty members, before long there should be new therapies that prevent the suffering associated with a host of diseases."

John McDonnell earned bachelor's and master's degrees in engineering from Princeton University. He also is an alumnus of the Olin School of Business.

Like his father, John McDonnell pursued a career in aerospace and in 1988 became chairman of the board and chief executive officer of McDonnell Douglas Corp. He continued to serve as chairman through the merger with The Boeing Co. and now serves on Boeing's board of directors.

He is also on the board of directors of Zoltek Companies Inc., the St. Louis Science Center, the Donald Danforth Plant Science Center, BJC Healthcare and Barnes-Jewish Hospital.

He and his wife, Anne, have five children.

The late James S. McDonnell is one of America's most honored aerospace pioneers. He first learned to fly in the Army Air Service, where he served as a second lieutenant between earning a bachelor's degree with honors in physics from Princeton in 1921 and a master's degree in aeronautical engineering from the Massachusetts Institute of Technology in 1925.

After working in many of the small but numerous aircraft plants of that era, in 1939 McDonnell founded his own company, McDonnell Aircraft Corp. in St. Louis.

The company grew from its beginnings at Lambert Field into one of the world's largest aerospace companies. In 1967, the company merged with Douglas Aircraft, and in 1997 McDonnell Douglas merged with Boeing, forming the world's largest aerospace company.

Its Integrated Defense Systems group — representing more than one-half of Boeing's business — is headquartered in St. Louis.

In addition to leading his company's many achievements, including building the first jet aircraft to operate from a U.S. carrier and developing America's first manned spacecraft, McDonnell was a longtime supporter of the United Nations and served as chairman of the U.N. Association of the United States of America.

In 1950, he established the McDonnell Foundation to "improve the quality of life." Today, renamed the James S. McDonnell Foundation, it abides by that mission by contributing to generations of new knowledge through its support of research and scholarship.

McDonnell established his first University professorship in the space sciences in 1964 and established the McDonnell Center for the Space Sciences in 1975. The James S. McDonnell Foundation's continued support of programs at the University reflects James S. McDonnell's main interests, which include genetics and human cognition.

The incredible generosity of the McDonnell family, the James S. McDonnell Foundation and the JSM Charitable Trust, which was established to match family members' gifts, has provided the School of Medicine with the James S. McDonnell Department of Genetics, the James S. McDonnell Professor of Genetics, the James S. McDonnell Professor of Molecular Genetics, the McDonnell Laboratory of Molecular Genetics, the McDonnell Center for Higher Brain Functioning, the McDonnell Center for Cellular Molecular Neurobiology, the James S. McDonnell Professor in Cognitive Neuroscience and the McDonnell Pediatric Research Building.

Needleman professorship will guide clinical science

BY DIANE DUKE WILLIAMS

Philip Needleman, Ph.D., and his wife, Sima, have established the Philip and Sima K. Needleman Professorship at the School of Medicine. The professorship will support a faculty member holding a key leadership position within the new BioMed 21 initiative.

The announcement was made by Chancellor Mark S. Wrighton and Larry J. Shapiro, M.D., executive vice chancellor for medical affairs and dean of the School of Medicine.

"Philip and Sima Needleman have contributed greatly to the St. Louis community and to Washington University," Wrighton said. "We are extremely grateful for their commitment to the future of medical research."

Shapiro said, "We thank the Needlemans for this wonderful gift and are honored that their names will be associated with the School of Medicine in perpetuity. The chair will be held by an accomplished clinical investigator who will head our new Clinical Sciences Division."

Philip Needleman chaired the School of Medicine's Department of Pharmacology from 1976-1989 and was senior executive vice president, chief scientific officer and chairman of research and development at Pharmacia Corp. (formerly Monsanto/Searle) from 1989-2003.

As adjunct professor of molecular biology and pharmacology and as a member of the School of Medicine's National Council, the University's Board of Trustees and the Barnes-Jewish Hospital board, he maintains close ties with the University. He was elected Basic Science Teacher of the Year five times during his 22 years on the faculty.

Needleman conceived and developed CelebrexTM, a type of arthritis drug called a COX-2 inhibitor that treats the pain and inflammation of osteoarthritis and adult rheumatoid arthritis. As well as being an expert on inflammation, he is recognized worldwide for his research on organic nitrates, his work on blood pressure regulation and the discovery of atrial natriuretic factor, the molecule that conveys information from the heart to the kidneys.

Needleman's earliest studies focused on the enzymatic breakdown of organic nitrates, and he continued this work after moving to the Washington University School of Medicine in 1964. This early research revealed that nitroglycerin, which was taken by mouth for angina, is completely degraded by the liver before it can circulate around the body.

As a result, patients now place nitroglycerin under the tongue, allowing it to enter the bloodstream directly.

Metabolites of arachidonic acid then became a major focus of his work. He studied their roles in the kidney and heart and explored their contributions to inflammation and blood clotting. This led him to discover the first inhibitor of a platelet enzyme called thromboxan synthase.

He also studied arachidonic acid metabolites called prostaglandins, which perform a range of regulatory functions but are largely responsible for the pain of arthritis and other inflammatory conditions.

In 1989, Needleman's experiments predicted that a key enzyme in prostaglandin synthesis called COX (cyclooxygenase) exists in two other forms. Other scientists cloned the second enzyme, confirming that COX-1 synthesizes the prostaglandins involved in inflammation and tissue injury.

That year, Needleman moved to Monsanto, where his group produced large amounts of COX-2 for study. The researchers then synthesized and tested the compound that became Celebrex.

By inhibiting COX-2 and not COX-1, Celebrex avoids the side effects associated with aspirin and other anti-inflammatory drugs. Celebrex is now used by more than 20 million arthritis sufferers and is the first drug therapy for the treatment of precancerous colon polyps.

Needleman was elected to the National Academy of Sciences in 1987 and to the academy's Institute of Medicine in 1993. He received Washington University's Distinguished Faculty Award on Founders Day in 1987, a Second Century Award in 1994 and an honorary degree in 2001.

Sima Needleman earned a master of social work degree from the George Warren Brown School of Social Work in 1974.

She was a medical social worker at Jewish Hospital (now Barnes-Jewish Hospital North) from 1976-1992. She served patients with obstetrical problems, and in 1983 she began providing counseling and social service support to patients in the hospital's In Vitro Fertilization Clinic.

From 1992 until her retirement in 1999, she worked in private practice, serving patients with pregnancy-related problems.

A member of GWB's National Council, Needleman served 10 years on the GWB Alumni Board, where she chaired numerous committees and served as president from 1993-95.

She also was a practicum instructor for GWB while at Jewish Hospital.

In 2001, she was awarded the School of Social Work's President's Award, which recognizes long-standing and distinguished commitment to the alumni association and exemplary work in bringing together alumni, faculty and students.

She and her husband are establishing a Sima K. Needleman endowed social work scholarship.

BioMed 21

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be in immediate proximity to the facilities in which Washington University Physicians provide patient care — Barnes-Jewish Hospital, St. Louis Children's Hospital, the new Center for Advanced Medicine and Siteman Cancer Center. It will also be conveniently located next to the new Farrell Learning and Teaching Center — expected to be completed in 2005 — an important teaching component of BioMed 21.

"BioMed 21 represents a new paradigm in basic and life science research," Wrighton said. "We will expand our research at multiple levels and profoundly change the way we deploy resources and group faculty from multiple disciplines encompassing the biological, physical and computer sciences and engineering.

"By bringing together basic scientists and clinical researchers of different expertise, we will address the most important questions in biomedical science and translate our findings into new therapies and potential technologies.

"Our history has been one of continuous improvement and achievement on both the Medical and Hilltop campuses," Wrighton added. "We have demonstrated repeatedly that we can convert investments in education and research into sustained progress and growth, while serving as an economic engine for the community.

"We are enthusiastic that BioMed 21 will represent a step forward for the greater St. Louis region as it sustains its efforts to remain a powerhouse in plant and life sciences and especially in biomedicine."

Although the new BioMed 21 research building is in the design stage, other medical facilities are already being built or renovated in the early stages of BioMed 21.

The floor just above the existing Genome Sequencing Center at 4444 Forest Park Ave. will undergo a $13.5 million reconstruction. It will provide space for the first cadre of interdisciplinary researchers in a new Genome Sciences Program.

Additionally, an $18 million, 40,000-square-foot research facility designed to spur development of mouse models for human diseases is being constructed near the corner of Clayton and Taylor avenues.

Seed money

A previous Danforth Foundation gift will provide a $30 million endowment for "start-up" funds to stimulate research.

Of that $30 million now dedicated to BioMed 21, $6 million will be set aside to endow eight Danforth Foundation Career Development Professorships. These professorships will be awarded to young faculty members, speeding their ability to launch collaborations, projects, grants and laboratories at an early phase in their careers.

Also now committed to BioMed 21 are $6 million from John F. McDonnell and the JSM Charitable Trust to endow four new professorships, and a gift from Philip and Sima Needleman establishing the Philip and Sima K. Needleman Professorship.

The Needleman professorship will be held by a senior leader recruited or appointed to play a leadership role in a new Division of Clinical Sciences devoted to developing translational research to advance patient care.

"These transforming gifts from the Danforth Foundation, John McDonnell and the Needlemans, for which we are so deeply grateful, will make it possible to recruit key faculty and stimulate creation of the interdisciplinary units that are the core of BioMed 21," Wrighton said.

Faculty expands

More than 50 new faculty positions will be established as BioMed 21 develops. These positions will enable the University to recruit or promote faculty who will be successful in competing for outside research funding and philanthropic support.

Additionally, the career-development professorships for young faculty committed to pursuing clinical research and financial support for an additional 50 students earning their Ph.D. or combined M.D./Ph.D. degrees will assure that BioMed 21 energizes faculty and students at every level of career development.

"Resources channeled through BioMed 21 will enable Washington University scientists and physicians to harness genomics and other evolving disciplines in order to cure diseases," said Shapiro, a geneticist and pediatrician. "The interdisciplinary approaches that characterize BioMed 21, the strength and reputation of our Genome Sequencing Center and our medical faculty's record levels of funding from NIH and other sources will cement the School of Medicine's roles as an international leader in biomedical science and as a model community of scholars alluring to top researchers and students everywhere."

The remainder of the more than $300 million needed for BioMed 21 will come from further philanthropic support, additional internal resources and anticipated increases in peer-reviewed research and training awards from the NIH and other sources.

Diabetes, obesity, Alzheimer's, Parkinson's, neuropsychiatric, cardiovascular and autoimmune diseases, plus a wide range of cancers and infectious diseases, will all be areas of importance in BioMed 21. As the initiative progresses, the creation of interdisciplinary teams is expected to enhance research efforts in an even wider range of diseases and involve faculty in every department of the medical school and a number of departments on the Hilltop Campus.

Three focus areas

Initially, BioMed 21 includes focused efforts in three broad-based, interdisciplinary programs:

• A new Genome Sciences and Human Genetics Program to complement and amplify the ongoing research in the medical school's Genome Sequencing Center;

• A Division of Clinical Sciences, through which a new generation of clinical researchers can be trained, and established specialists in patient-focused research can translate basic discoveries into new treatments; and

• A University-wide Center for Biological Imaging to enhance imaging at wide-ranging scales, from single molecules to whole organs.

"Within each of the three focus areas, much opportunity to collaborate exists among medical school faculty and physicists, chemists, biologists, engineers, psychologists and computational scientists on the University's Hilltop Campus," said Edward S. Macias, Ph.D., executive vice chancellor and dean of Arts & Sciences. "BioMed 21 will fuse our Hilltop engineering and Arts & Sciences faculty and Medical Campus faculty into teams with intellectual and technical vigor, poised to make discoveries that can enhance our effort to improve human health."

BioMed 21 was developed by a team of medical school leaders, including all of its department heads, with input from the School of Medicine National Council and the University's Board of Trustees.

A subcommittee of the national council will be created to serve as an important resource regarding the implementation of BioMed 21. Philip Needleman will chair the subcommittee.

Notables

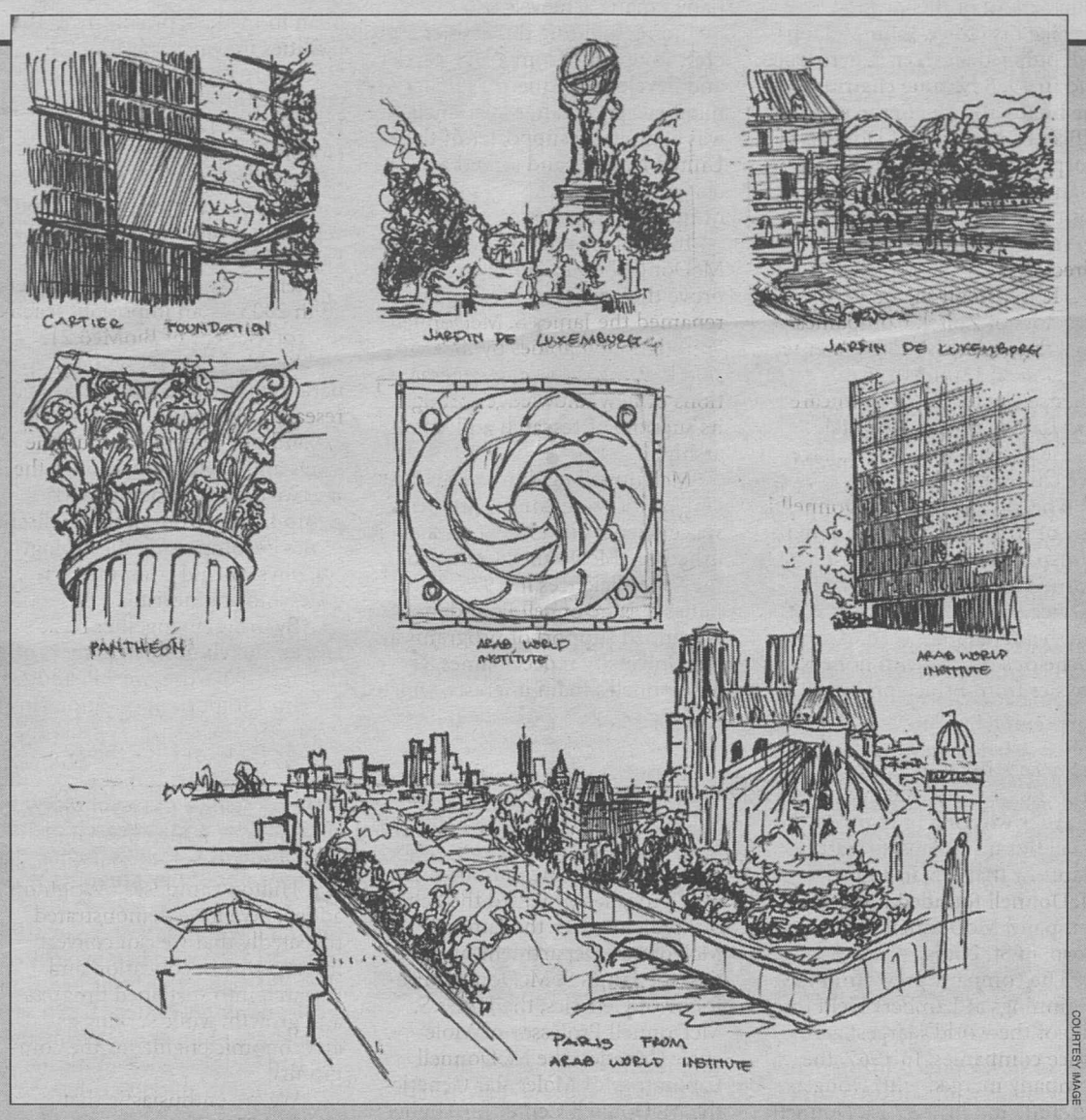
Introducing new faculty members

The following are among the new faculty members at the University. Others will be introduced periodically in this space.

Amar Cheema, Ph.D., joins the Olin School of Business as assistant professor of marketing. Cheema previously worked as an instructor and research assistant at the Leeds School of Business at the University of Colorado. Prior to his academic career, he held an executive position in the sales and marketing department at Asian Paints Ltd. in India. Cheema's research and teaching interests include consumer behavior in auctions, consumer spending decisions, pricing, product strategy, marketing management, e-commerce and marketing research. Cheema earned a doctorate in business administration in 2003 from the University of Colorado, a master of business administration degree from the Indian Institute of Management, Calcutta, in 1996, and a bachelor of engineering degree from Delhi University in 1994.

Amanda Friedenberg, Ph.D., joins the Olin School of Business as assistant professor of economics. Friedenberg worked as a teaching assistant at Harvard University's Kennedy School of Government (2000) and as a teaching fellow at Harvard Business School (2001-02). Friedenberg's areas of expertise are business policy and strategy, business and government, microeconomics, and industrial organization economics. Her research and teaching interests include game theory, microeconomic theory, and political economy. She earned a doctorate in political economy and government from Harvard University in 2003, and a bachelor's degree in economics and politics with honors from New York University in 1998.

Gautam Gowrisankaran, Ph.D., joins the Olin School of Business as assistant professor of economics. His research interests include industrial organization, health economics, and applied economics. Gowrisankaran served as an assistant professor at the University of Minnesota from 1995-2002, and as a visiting assistant professor at Yale University in 2003, at Harvard University in 2002, and at the University of Michigan from 1997-98. He also acted as a consultant with the Federal Reserve Bank of New York from 2002-03 and at the Federal Reserve Bank of Minneapolis from 1998-2001. Gowrisankaran earned a doctorate in economics in 1995, a master's degree in philosophy in 1993, and a master's degree in economics in 1992, all from Yale University, and a bachelor's degree in economics from Swarthmore College in 1991.



COURTESY IMAGE

Summer in Paris (and Lisbon, and Helsinki ...) **Dozens of drawings by 12 students from the School of Architecture's summer Study Abroad Program are on view in Givens Hall through Nov. 30. The program, directed by Assistant Professor Zeuler Lima, consisted of a two-week preparatory workshop followed by a month-long "traveling course" in which students visited nearly 100 buildings and urban spaces throughout Europe. Pictured are sketches of Paris by junior Jeffrey LaBoskey, including views of the Cartier Foundation, designed by architect Jean Nouvel, and Luxembourg Park (top row); a column from the Pantheon and a detail and view of Nouvel's Arab World Institute (middle); and the Cathedral of Notre Dame (bottom).**

Burris receives prestigious award

BY ANDY CLENDENNEN

There are few honors greater than being respected, admired and honored by one's peers.

George Burris, director of off-campus housing, recently found that out.

Burris was presented with the highest honor the National Association of College Auxiliary Services (NACAS) bestows — the Robert F. Newton Award for Distinguished Service — Nov. 2 in Colorado Springs, Colo.

In his 25 years as a NACAS member, Burris has served as president of NACAS Central, regional and national conference chair, and president of NACAS, among his many other leadership roles. He currently is president of the NACAS Education Foundation.

Since joining the association, he has never failed to attend a national annual conference.

"On his own campus, George has always been a wonderful representative of NACAS and has had many difficult assignments ... " said Bradley University's Ken Goldin, who delivered an introduction outlining the significance of the award and his reasons for nominating Burris.

"George is known throughout our organization as a person on whom you can always count, a person who gives great advice, and a person to whom you can always go to when you need help."

The Newton award recognizes an individual who has:

• Displayed extraordinary and outstanding service to NACAS and to the profession;

• Has contributed over a minimum period of five years to the cumulative knowledge and stature of the profession;

• Has promoted the auxiliary-services profession through NACAS and/or the regional associations in an ongoing fashion, establishing himself or herself as an effective leader within the auxiliary-services field and serving as an example to others in the profession; and

• Has provided significant contributions to NACAS through committee assignments, chairing committees, and/or service on the national or regional boards.

Other contributions, such as awards received, literary credits to the profession are also considered in the selection process.

The NACAS was established in 1969 and is the largest nonprofit association for support services in higher education. It comprises more than 1,100 colleges and universities across North America, Great Britain, Ireland, Australia and parts of Asia.

Employment

Go online to **hr.wustl.edu** (Hilltop Campus) or **medicine.wustl.edu/wumshr** (Medical Campus) to obtain complete job descriptions.

Hilltop Campus

For the most current listing of Hilltop Campus position openings and the Hilltop Campus application process, go online to hr.wustl.edu. For more information, call 935-5906 to reach the Human Resources Employment Office at West Campus.

General Lab Assistant-Part Time 020237

Business Development Specialist 030334

Admissions Counselor 040025

Earth & Planetary Sciences Library Assistant 040029

Temporary Filing Clerk 040059

Assoc. Director, Business Library 040066

Deputized Police Officer 040070

Accounting & Payroll Asst. 040074

Senior Research Assistant 040078

Department Secretary 040082

Laboratory Technician/Analytical Chemist 040083

Supervisor, Facilities Inspection & Estimating 040085

Asst. Dean & Academic Coord. 040090

Regional Dir. of Development 040096

Grants Coord./Office Support 040097

Asst. Dir., Student Financial Services 040100

Research Grant Specialist 040102

Grant Development Manager 040104

Events Coordinator 040105

Medical Sciences Writer 040106

Hazardous Materials Manager 040107

Student Records Office Assistant 040109

ESL Instructor (English as Second Language) 040110

Medical Campus

This is a partial list of positions in the School of Medicine. Employees: Contact the medical school's Office of Human Resources at 362-7196. External candidates: Submit résumés to the Office of Human Resources, 4480 Clayton Ave., Campus Box 8002, St. Louis, MO 63110, or call 362-7196.

Medical Secretary II (Part-time) 040525

Facilities Technician II 040527

Administrative Coord. 040541

Custodian 040543

Research Technician II 040555

RN — Research Patient Coord. 040556

Medical Asst. II 040558

Research Patient Asst. 040559

Practice Office Manager 040561

Manager, Third Party Reimbursement 040562

Supervisor, Patient Accounts 040563

Secretary III 040565

Research Patient Coord. 040566

Clerk I 040567

Sr. Statistical Data Analyst 040582

Research Technician II 040583

Audiovisual Technician 040584

Reimbursement Supervisor 040585

Medical Secretary II 040586

Clinical Nurse Coord. 040587

Coord: Clinical Lab/Research/Office/Education 040588

Admin. Asst.: Special Project Administrative 040598

Animal Care Technician I 040599

Coder, Certified 040569

Case Manager 040601

Of note

Philip V. Bayly, Ph.D., professor of mechanical and aerospace engineering, and **Guy M. Genin**, Ph.D., assistant professor of mechanical and aerospace engineering, have received a two-year, $363,376 grant from the National Institute of Neurological Disorders and Stroke for research titled "Intracranial Strain in Mild Traumatic Head Injury." ...

Alberto Isidori, Libera Docenza, professor of electrical and systems engineering, and **Christopher I. Byrnes**, Ph.D., dean of the School of Engineering & Applied Science and the Edward H. and Florence G. Skinner Professor of Systems Science and Mathematics, have received a three-year, $185,000 grant from the National Science Foundation for research titled "Tracking Control for Nonlinear Systems Distributed Over Communication Networks." ...

Zhengmin Huang, Ph.D., research assistant professor of orthopaedic surgery, has received a two-year, $306,000 grant from the National Institute of Dental and Craniofacial Research for research titled "Molecular Switches for Initiation of Chondrogenesis." ...

Diane L. Damiano, Ph.D., research associate professor of neurology, has received a two-year, $100,000 grant from the United Cerebral Palsy Research and Educational Foundation for research titled "Can Hip and Knee Extensor Strengthening Improve the Diplegic Gait Pattern?" ...

Kenneth J. Goldman, Ph.D., associate professor of computer science and engineering, has received a three-year, $500,000 grant from the National Science Foundation for research titled "An Interactive Learning Environment for Introductory Computer Science." ...

Lee Ratner, M.D., professor of medicine, has received a three-year, $680,850 grant from the National Cancer Institute for research titled "Chemo/Anti-retroviral Therapy for HTLV-1 ATLL." ...

David H. Gutmann, M.D., the Donald O. Schnuck Family Professor of neurology, has received a one-year, $150,000 grant from the James S. McDonnell Foundation for research titled "Development of Preclinical Mouse Models of Meningioma." ...

Eliot Fried, Ph.D., associate professor of mechanical engineering, has received a three-year, $128, 913 grant from the National Science Foundation for research titled "Collaborative Research: Surface and Actuation kinetics of Stimulus-Responsive Hydrogels." ...

Jonathan Green, M.D., associate professor of medicine, has received a one-year, $35,000 grant from the American Lung Association.

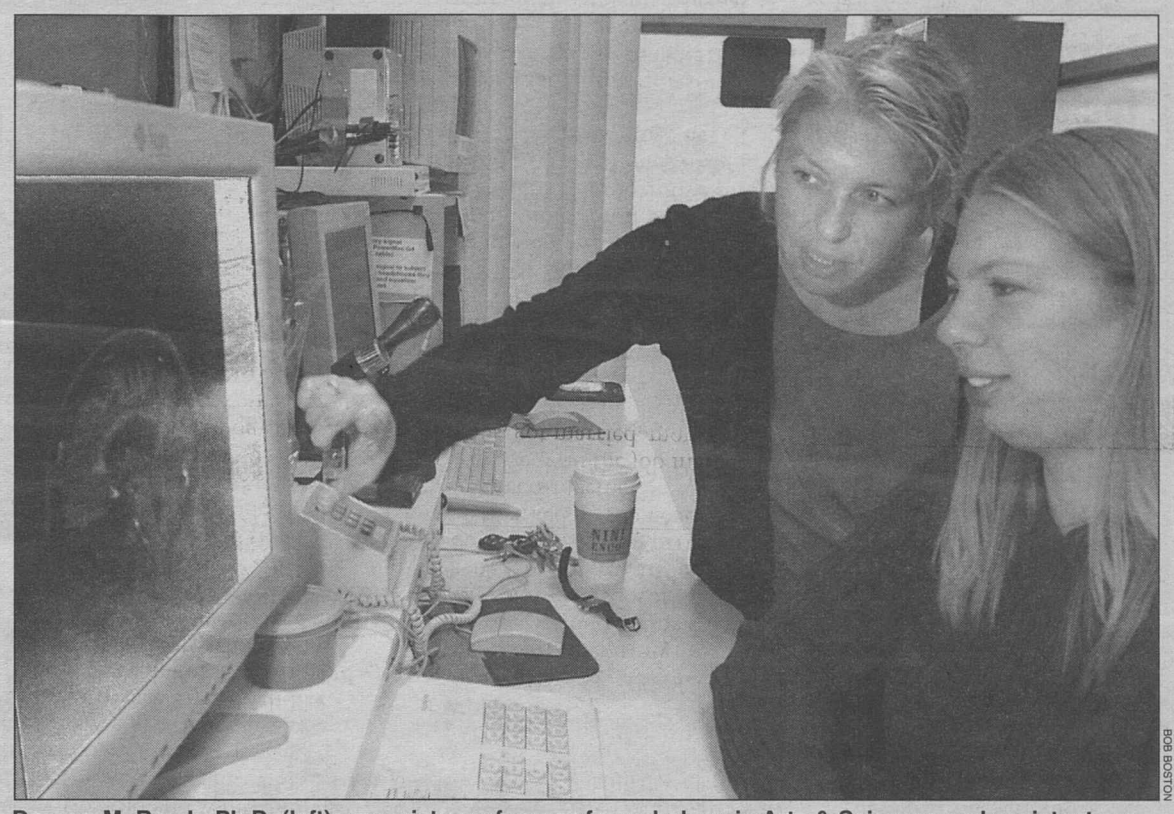
Obituaries

Patricia Sacks Fingert, former professor in the George Warren Brown School of Social Work, died Friday, Oct. 24, 2003, at Barnes-Jewish Hospital of complications following surgery for colon cancer. She was 91.

Louis Cook Peltier, former assistant professor of geology and geography, died Tuesday, Oct. 28, 2003, of a heart attack at his home in Bethesda, Md. He was 87.

Betty Perry, former research assistant in the School of Medicine, died Saturday, Nov. 1, 2003, of a heart attack at her home in Town & Country, Mo. She was 78.

Washington People



BOB BOSTON

Deanna M. Barch, Ph.D. (left), associate professor of psychology in Arts & Sciences and assistant professor of psychiatry in the School of Medicine, and research assistant Kristen Haut discuss an image of a study participant's brain. Graduate student Caroline Racine says Barch "puts a lot of time and effort into her classes and genuinely cares about her students as individuals."

Stopping schizophrenia

To prevent the symptoms, Deanna M. Barch works to identify young people at risk

BY EILEEN P. DUGGAN

Deanna M. Barch, Ph.D., doesn't want much — she just aims to discover the cause of schizophrenia and develop a way to prevent it.

Barch, associate professor of psychology in Arts & Sciences and assistant professor of psychiatry in the School of Medicine, devotes much of her research to studying schizophrenia in order to better understand the mental illness. Her focus is on identifying young people at risk for the disease and tracking the development of symptoms, with an eye toward prevention.

"It seems to me there's a lot of promise in trying to detect and intervene early before the onset of full-blown schizophrenia," says Barch, a University faculty member since 1998. "Can we predict who is going to develop schizophrenia and can we intervene early enough to prevent the symptoms — hallucinations, delusions, disordered thought processes and behaviors — from ever occurring?"

Scientists in Barch's lab are studying two groups at heightened risk of developing schizophrenia: individuals with schizotypal personality disorder, which is thought to be genetically associated with schizophrenia, and siblings of people with schizophrenia. The participating siblings do not yet have the disease but are not yet past the risk period for developing it.

Barch has found that studying people already ill with the disease has a number of challenges, "including the effects of medication, hospitalization and co-morbid disorders such as substance abuse," she says.

"Studying individuals at risk for schizophrenia provides a way of avoiding some of these complications and determining the causal role that specific neurobiological and/or cognitive deficits play in the development of schizophrenia."

These studies involve testing participants on certain kinds of cognitive, memory and learning tasks while acquiring images of their brains with a functional magnetic resonance imaging (fMRI) scanner.

Barch looks for changes in brain activity while her collaborator, John G. Csernansky, M.D., the Gregory B. Couch Professor of psychiatry and associate professor of anatomy and neurobiology in the medical school, studies the structural changes in the volume, size and shape of various brain regions in the same individuals.

In 2001, Csernansky and Barch received a $2 million grant from the National Institute of Mental Health to open a Conte Center for Neuroscience Research. The center oversees several major brain-mapping projects designed to locate and identify anatomical differences in people who have or are at risk for schizophrenia.

COURTESY PHOTO

Deanna M. Barch with her family: husband Todd S. Braver, Ph.D., assistant professor of psychology in Arts & Sciences; and their daughters, Rachel (left) and Elizabeth.

"Deanna's work is really at the cutting edge of what the National Institute of Mental Health refers to as 'translational research,'" says Ann Kring, associate professor of psychology at the University of California, Berkeley. "She has made some important discoveries about cognitive processes in schizophrenia, such as working memory, that have really made a significant impact in the field."

Another WUSTL collaborator, Yvette I. Sheline, M.D., associate professor of psychiatry and of neurology and assistant professor of radiology, calls Barch a "wonderful colleague and collaborator" and says she believes Barch's most significant contribution to date is the use of fMRI to demonstrate brain areas that are underactive "when cognitive processing goes awry in schizophrenia."

Barch's commitment to early detection has its roots in her own early years in Florissant, then Chesterfield, both in St. Louis County.

"I've known I wanted to be a psychologist ever since high school, although what kind of psychologist changed pretty dramatically," she says. "I felt like there were a lot of kids who had problems in high school who were ignored or overlooked and really didn't do very well.

"So I wanted to be a high-school counselor and try to identify these kids and to determine early on if there are things you could do to help."

She took psychology classes and became a peer counselor at Parkway Central High School.

"I was a psych major from the first day of college" at Northwestern University, Barch says.

Her abnormal-psychology professor, depression researcher Lauren Alloy, tapped some of her star students, including Barch, to become her research assistants.

"I liked it so much," Barch says. "I became her honors student, and that set me on the path of being more interested in the research or academic side of psychology."

After earning a bachelor's degree in 1987, Barch spent a year in Chicago as a case manager for an experimental program for the chronically mentally ill.

"I have this vivid memory of working with this young guy who was 20 or 21, who had been in college and had a psychotic break and really never got better," Barch says. "Talking to him and realizing that he had all these goals in his life — he wanted to go on to college and get married and have a career — and then he developed this disorder and it was pretty clear that he was never going to get to accomplish all these things.

"It just seemed to me such a waste of potential. It seemed unfair — why is that not happening to me? Why do I get to go on and have this wonderful life and achieve all these things whereas this person is going to be tormented by this horrible mental illness? So then I decided I really wanted to focus on schizophrenia."

She applied to graduate school at the University of Illinois to work specifically in the schizophrenia area. Although her career path changed from counselor to researcher, she says her motivation remained the same: "Can we identify signs of mental illness early and intervene early?"

After earning a master's degree and a doctorate in clinical psychology from Illinois in 1991 and 1993, respectively, Barch served a one-year internship at Western Psychiatric Institute and Clinic (WPIC) at the University of Pittsburgh Medical School. She followed up the internship with a three-year postdoctoral fellowship in Jonathan D. Cohen's lab, also at WPIC.

That's when her personal life got especially interesting. She began dating Todd S. Braver, Ph.D., who was also working in Cohen's lab. A few years later, they made the relationship permanent and embarked on the next stage of their careers together.

"We went on the job market, got jobs, got married, moved and had a kid all in one year," Barch says.

Braver and Barch applied independently for two open positions in the WUSTL Department of Psychology, and they were both hired in 1998. Barch and Braver, assistant professor of psychology, now co-direct the cognitive control and psychopathology laboratory in the psychology department.

"She is an inspiration for me, particularly as a woman in science," says Caroline Racine, a fifth-year graduate student. "She has been able to balance having a family while writing multiple grants, papers and being evaluated for tenure.

"She also consistently demonstrates high-quality research, puts a lot of time and effort into her classes and genuinely cares about her students as individuals."

Barch and Braver now have two daughters, Rachel, 4, and Elizabeth, 1. Barch is quick to point out that she could not balance it all without help from her parents, who still live in the house where she and her older brother grew up in Chesterfield.

Twice a week, Barch's parents baby-sit their granddaughters and make dinner for the family. Meanwhile, father-in-law Sanford Braver, a psychology professor at Arizona State University, provides long-distance career-related advice to the couple.

Jennifer Mathews, a second-year graduate student who has worked in Barch's lab for four-and-a-half years, calls her a "dedicated scientist, researcher and mentor."

"Her philosophy in mentoring me has been to enable me to develop as a scientist while providing support and feedback required to reach my goals," Mathews says.

Barch was named an Outstanding Faculty Mentor in 2000 by the Graduate Student Senate.

Among the many recognitions she has received from her peers is the 2002 Distinguished Scientific Award for Early Career Contribution to Psychology from the American Psychological Association (APA).

"We all found Deanna's record to be outstanding," says Susan Mineka, director of clinical training at Northwestern, who was chair of the APA award committee. "Her experiments are elegant and creative. When you read some of (Barch's papers), you can see what a brilliant young investigator she is."

Deanna M. Barch

Hometown: St. Louis

Degrees: B.A. 1987, psychology, Northwestern University; M.A. 1991, Ph.D. 1993, both in clinical psychology, University of Illinois

Courses taught: "Abnormal Psychology" (undergraduate survey course); "Biological Bases of the Major Mental Disorders" (undergraduate/graduate); "Neuropsychological Syndromes" and "Personality Assessment" (both graduate-level)

Family: Husband, Todd S. Braver, Ph.D., assistant professor of psychology and co-director with Barch of the WUSTL cognitive control and psychopathology laboratory; daughters Rachel, 4, and Elizabeth, 1